

Ex parte Slack et al.

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WILLIAM E. SLACK, RICK L. ADKINS
and HANS G. SCHMELZER

MAILED

APR 29 1997

PAT & TM OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

Appeal No. 94-4169
Application 07/957,929¹

ON BRIEF

Before GARRIS, WEIFFENBACH and WARREN, *Administrative Patent Judges.*

WEIFFENBACH, *Administrative Patent Judge.*

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-4. Claim 5, the only

¹ Application for patent filed October 7, 1992.

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other claim remaining in the application, has been withdrawn from consideration pursuant to a restriction requirement. We reverse.

The Claimed Subject Matter

The claims on appeal are drawn to a process for preparing a secondary amine terminated polyether having an amine functionality of 2 to 6. Claim 1 is illustrative of the claimed subject matter:

1. A process for preparing a secondary amine terminated polyether having an amine functionality of 2 to 6 comprising reacting a polyether containing 2 to 6 leaving groups with a primary amine or ammonia at a temperature of about 70 to 250 degrees Centigrade.

The Prior Art

The examiner relies on the following reference to support the rejection of the claims under appeal:

Hester	2,302,388	Nov. 17, 1942
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Hester discloses a process for preparing a secondary-amine terminated polyether. The process comprises reacting an monofunctional polyether with a primary or secondary amine (col.

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1, line 48 to col. 2, line 37). Specifically, Example 1 of the patent discloses reacting butoxyethoxyethyl chloride and aniline at 140-156° C while Example 3 discloses reacting butoxyethoxyethyl chloride and cyclohexylamine at 122-130° C. The product obtained from each example is a secondary amine terminated polyether.

The Rejection

Claims 1-4 stand rejected under 35 U.S.C. § 103 as being unpatentable over Hester. The examiner concludes that

[t]he instant invention would have been *prima facie* obvious to one of ordinary skill in the art at the time it was made, because the *process* of the present claims is essentially the same as that of Hester. The only difference is that the reactant of the former contains at least two leaving groups (i.e., halogen atoms) rather than one (Hester). The ordinary practitioner would have been motivated to make the instant invention because one would have fully recognized that the process of Hester would go to completion even when preparing an amine-terminated polyether with an amine functionality of 2-6 (note that the reaction conditions would be the same). A long line of cases has held that the mere use of different starting materials, whether novel or known, in a conventional process to produce the product one would expect therefrom does not render the process obvious. In re Surrey, 319 F.2d 233, 138 USPQ 67 (CCPA 1963); In re Kanter, 399 F.2d 249, 158

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USPQ 331 (CCPA 1968); In re Larsen, 292 F.2d 531, 130
USPQ 209 (CCPA 1961); Ex parte Ryland, 108 USPQ 15
(BPAI [sic, Bd. App.] 1948); In re Durden, Jr., 763
F.2d 1406, 226 USPQ 359 (Fed. Cir. 1985). [Answer,
page 4.]

Opinion

There does not appear to be any dispute that Hester teaches preparing a secondary amine terminated polyether from a polyether having single amine functionality. The issue to be decided is whether or not it would have been *prima facie* obvious to one of ordinary skill in the art from the teachings of Hester to prepare a secondary amine terminated polyether having an amine functionality greater than one.

We have carefully reviewed the application record which led to this appeal and the respective positions advanced by appellants and the examiner for patentability of the appealed claims. However, for the reasons stated below, we find that the prior art applied by the examiner fails to establish a *prima facie* case of obviousness for the claimed subject matter. Accordingly, we will not sustain the examiner's rejection.

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It is well settled that the examiner has the burden of establishing that the claimed invention would have been obvious over the prior art taken as a whole. The examiner may satisfy this burden by making a showing of some objective teachings or suggestions in the prior art that knowledge available to one of ordinary skill in the art would have led that person to arrive at the claimed invention, including each and every limitation in the claims, without recourse to appellants' disclosure. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *In re Fine*, 837 F.2d 1071, 1074-1076, 5 USPQ2d 1596, 1598-1600 (Fed. Cir. 1988); *In re Piasecki*, 745 F.2d 1468, 1471-1472, 223 USPQ 785, 787-788 (Fed. Cir. 1984).

While Examples 1 and 3 and other examples in Hester disclose reacting a primary or secondary amine and a polyether having a terminal chloride leaving group at a temperature within appellants' claimed temperature range to obtain a secondary amine terminated polyether, the reference does not teach or suggest that reacting a polyether having an amine functionality of 2 to

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6, i.e. more than one leaving group. In responding to appellants' argument that Hester neither teaches or suggests polyethers having a functionality 2-6, the examiner stated that

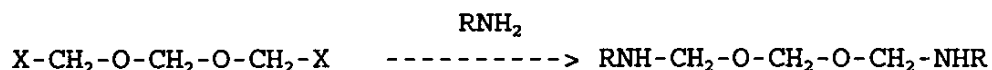
one of ordinary skill in the art of organic synthesis would have fully expected the process of Hester and the present claims to go to completion if the reactant had two leaving groups which were subsequently replaced with two amino groups after undergoing the process as presently claimed and that which is disclosed by Hester. Not only would this not be unusual, but it would be expected by those of skill in the art of organic chemistry. Further, Hester does, in fact, teach the preparation of secondary amine-terminated polyethers, in spite of Appellant's [sic, Appellants'] statements to the contrary. Hester, like the present claims specifically teaches using aniline and cyclohexylamine as the amine reactants (Examples 1 and 3, respectively). This will, of course, result in a compound that is terminated by a secondary amine. [Answer, pages 5 and 6; emphasis in the original.]

As we understand the examiner's position, a skilled chemist would have expected amination at all multiple leaving group sites as it would at a single leaving group site. In the supplemental examiner's answer, the examiner further stated that

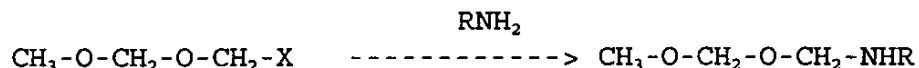
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[i]t would be helpful to show by reaction schemes what Appellant is claiming and what the prior art shows.

I. Applicant (reading claim 1 broadly)



II. Hester



All other arguments notwithstanding, the diagram demonstrates what Appellant claims, what Hester teaches, and the difference between the two (one leaving group/amine group in Hester as opposed to two in the presently claimed process). It therefore cannot be seriously argued that one of ordinary skill in the art of synthetic organic chemistry would not have found reaction I to be obvious upon viewing reaction II....
[Supplemental examiner's answer, pages 2 and 3.]

Appellants responded in their supplemental reply brief that they

do indeed seriously argue that one skilled in the art would not have found the claimed process obvious in view of the teachings of Hester. At best, Hester might lead one skilled in the art to consider it "obvious to try" the reference process with polyethers which contain more than 1 leaving group. "Obvious to try" is not, however, the standard used in determining patentability under 35 USC 103. [Supplemental reply brief, page 3.]

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Having knowledge of Hester only, would one having ordinary skill in the chemical arts be motivated to arrive at appellants' claimed invention? We think not.

On the record before us, the examiner's prediction that a skilled chemist would expect a polyether having multiple leaving group sites to be aminated at each site is putting the cart before the horse. The fact that appellants' claimed process utilizes a known chemical reaction of a polyether chloride and a primary or secondary amine does not alone make the claimed process obvious. In *re Brouwer*, 77 F.3d 422, 425, 37 USPQ2d 1663, 1666 (Fed. Cir. 1996). The prior art must first suggest or disclose a compound having more than one leaving group site with one site being at a terminal end of the compound and that, if the compound is treated with a primary or secondary amine, a secondary amine terminated compound would have been obtained. Hester is limited to a polyether having a single leaving group at the terminal end of a polyether compound. The examiner has not provided any prior art evidence containing any suggestion or motivation to modify Hester to substitute a polyether having 2-6

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leaving groups for Hester's polyether chloride. To support a rejection for obviousness, the teachings of Hester must suggest or motivate one having ordinary skill in the art to arrive at appellants' claimed starting material. *In re Ochiai*, 71 F.3d 1565, 1570, 37 USPQ2d 1127, 1131 (Fed. Cir. 1995). The examiner acknowledges that Hester does not teach a polyether compound having more than one leaving group site and the examiner does not rely on the teachings of Hester to suggest appellants' claimed starting material. *In re Deuel*, 51 F.3d 1552, 1558, 34 USPQ2d 1210, 1214 (Fed. Cir. 1995). Thus, the only source for suggesting to a person having ordinary skill in the art to employ a polyether compound having more than one leaving site in Hester's process could only have come from appellants' disclosure, and not from the prior art.


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For the foregoing reasons, we conclude that the examiner has not established a *prima face* case of obviousness. Accordingly, the decision of the examiner is reversed.

REVERSED


BRADLEY R. GARRIS)
Administrative Patent Judge)


CAMERON WEIFFENBACH)
Administrative Patent Judge)


CHARLES F. WARREN)
Administrative Patent Judge)

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